IN THE CLAIMS

1.-37. (Cancelled)

38. (Previously Presented) A device for fabricating a section of an aircraft fuselage via automated composite lamination on a mandrel surface, comprising:

a mandrel comprising a rotational axis and the mandrel surface, wherein the mandrel surface substantially conforms to the section of the aircraft fuselage;

a mechanical supporting structure moveable relative to the mandrel, wherein the mandrel is rotatable relative to said mechanical supporting structure; and

a plurality of material delivery heads supported by said mechanical supporting structure, wherein said mechanical supporting structure provides for movement of said plurality of material delivery heads relative to the mandrel surface during fabrication of the section of the aircraft fuselage, and wherein each of said plurality of material delivery heads is:

designed to apply composite material along the mandrel surface during fabrication of the section of the aircraft fuselage; and

individually positionally adjustable relative to the mandrel surface and the other material delivery heads during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

39. (Previously Presented) The device of claim 38, wherein each of said plurality of material delivery heads is:

rotatable about an axis normal to the rotational axis during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

40. (Previously Presented) The device of claim 38, wherein at least one of the material delivery heads is designed to apply composite material at a first angle relative to the mandrel, while at least one of the other material delivery heads is simultaneously applying composite material at a second angle relative to the mandrel.

41. (Previously Presented) The device of claim 38, wherein said mechanical supporting structure comprises a ring surrounding said mandrel surface and said device further comprises:

a ring cradle, wherein:

said ring cradle supports said ring, and

said ring cradle moves along the direction of the rotational axis of the mandrel.

42. (Previously Presented) The device of claim 38, further comprising:

an arm mechanism connecting said at least one material delivery head to said mechanical supporting structure and providing motion of said at least one material delivery head relative to the mandrel surface.

43. (Previously Presented) The device of claim 38, further comprising:

a tail stock that holds the mandrel and provides for rotation of the mandrel about the rotational axis of the mandrel.

44. (Previously Presented) The device of claim 38, wherein at least one of said plurality of material delivery heads is based on a flat tape laying delivery head.

45. (Previously Presented) The device of claim 38, wherein at least one of said plurality of material delivery heads is based on a contour tape laying delivery head.

46. (Previously Presented) The device of claim 38, wherein said mechanical supporting structure comprises a ring surrounding said mandrel surface, said ring connected to at least one vertical support post.

47. (Previously Presented) The device of claim 38, further comprising a horizontal turntable that supports the mandrel so that the rotational axis of the mandrel is vertical.

48. (Previously Presented) The device of claim 38, further comprising at least one creel system mounted on said mechanical supporting structure, wherein said creel system provides material to at least one of said plurality of material delivery heads.

49. (Previously Presented) The device of claim 38, wherein at least one of said plurality of material delivery heads is a fiber placement head.

50. (Previously Presented) The device of claim 38, wherein each of the material delivery heads is designed to apply the composite material in a ply orientation that is independent of ply orientations of the other material delivery heads.

51. (Previously Presented) A device for fabricating a section of an aircraft fuselage via automated composite lamination on a mandrel surface, comprising:

a mandrel comprising a rotational axis and the mandrel surface, wherein the mandrel surface substantially conforms to the section of the aircraft fuselage;

a mechanical supporting structure moveable relative to the mandrel, wherein the mandrel is rotatable relative to said mechanical supporting structure; and

a plurality of material delivery heads supported by said mechanical supporting structure, wherein:

said mechanical supporting structure provides for axial translation of said plurality of material delivery heads simultaneously relative to the mandrel surface during fabrication of the section of the aircraft fuselage, and wherein each of said plurality of material delivery heads is:

designed to apply composite material along the mandrel surface during fabrication of the section of the aircraft fuselage; and

individually positionally adjustable relative to the mandrel surface and the other material delivery heads during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

52. (Previously Presented) The device of claim 51, wherein each of said plurality of material delivery heads is:

rotatable about an axis normal to the rotational axis during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

53. (Previously Presented) The device of claim 51, wherein at least one of the material delivery heads is designed to apply composite material at a first angle relative to the mandrel, while at least one of the other material delivery heads is simultaneously applying composite material at a second angle relative to the mandrel.

54. (Previously Presented) The device of claim 51, wherein said mechanical supporting structure comprises a ring surrounding said mandrel surface, and said device further comprises a ring cradle, wherein:

said ring cradle supports said ring in a vertical orientation, and

said ring cradle moves along the direction of the axis of the mandrel to provide said axial translation of said plurality of material delivery heads simultaneously relative to the mandrel surface.

55. (Previously Presented) The device of claim 51, further comprising:

an arm mechanism connecting said at least one material delivery head to said mechanical supporting structure, wherein:

said arm mechanism provides motion of said at least one material delivery head relative to the mandrel surface; and

said arm mechanism provides an axial position adjustment of said at least one material delivery head relative to the mandrel surface.

56. (Previously Presented) The device of claim 51, further comprising:

a tail stock that holds the mandrel so that the axis of the mandrel is horizontal and provides for horizontal rotation of the mandrel about the axis.

57. (Previously Presented) The device of claim 51, wherein at least one of said plurality of material delivery heads is chosen from the group consisting of: flat tape laying delivery head, contour tape laying delivery head, fiber placement delivery head.

58. (Previously Presented) The device of claim 51, further comprising a horizontal turntable and wherein:

said mechanical supporting structure comprises a ring surrounding said mandrel surface,

said ring is connected to a vertical support post that provides vertical movement of said ring, and

said horizontal turntable supports the mandrel so that the axis of the mandrel is vertical.

59. (Previously Presented) The device of claim 51, further comprising at least one creel system mounted on said mechanical supporting structure, wherein said creel system provides material to at least one of said plurality of material delivery heads and said at least one of said plurality of material delivery heads is a fiber placement head.

60. (Previously Presented) The device of claim 51, wherein said plurality of material delivery heads are simultaneously controllable independent of each other.

61. (Previously Presented) The device of claim 51, wherein each of the material delivery heads is designed to apply the composite material in a ply orientation that is independent of ply orientations of the other material delivery heads.

62. (Previously Presented) A device for fabricating a section of an aircraft fuselage via automated composite lamination on a mandrel surface, comprising:

a mandrel comprising a rotational axis and the mandrel surface, wherein the mandrel surface substantially conforms to the section of the aircraft fuselage;

a mechanical supporting structure moveable relative to the mandrel, wherein the mandrel is rotatable relative to said mechanical supporting structure; and

a plurality of material delivery heads supported by said mechanical supporting structure and disposed surrounding the mandrel, wherein:

said mechanical supporting structure provides for: axial translation of said plurality of material delivery heads simultaneously relative to the mandrel surface during fabrication of the section of the aircraft fuselage, and wherein each of said plurality of material delivery heads is:

designed to apply composite material along the mandrel surface during fabrication of the section of the aircraft fuselage; and

individually positionally adjustable relative to the mandrel surface, the mechanical supporting structure and the other material delivery heads during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

63. (Previously Presented) The device of claim 62, wherein each of said plurality of material delivery heads is:

rotatable about an axis normal to the rotational axis during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

64. (Previously Presented) The device of claim 62, wherein at least one of the material delivery heads is designed to apply composite material at a first angle relative to the mandrel, while at least one of the other material delivery heads is simultaneously applying composite material at a second angle relative to the mandrel.

65. (Previously Presented) The device of claim 62, further comprising:

an arm mechanism connecting said at least one material delivery head to said mechanical supporting structure, wherein:

said arm mechanism provides motion of said at least one material delivery head independent of the other material delivery heads and relative to the mandrel surface in a direction normal to the mandrel surface;

said arm mechanism provides rotation of said at least one material delivery head independent of the other material delivery heads and relative to the mandrel surface about an axis normal to the mandrel surface;

said arm mechanism provides a circumferential position adjustment of said at least one material delivery head independent of the other material delivery heads and in a hoop direction relative to the mandrel surface; and

said arm mechanism provides an axial position adjustment of said at least one material delivery head independent of the other material delivery heads and relative to the mandrel surface.

66. (Previously Presented) The device of claim 62, wherein said mechanical supporting structure comprises a ring surrounding said mandrel surface, and said device further comprises:

a tail stock that holds the mandrel so that the rotational axis of the mandrel is horizontal and provides for horizontal rotation of the mandrel; and

a ring cradle, wherein:

said ring cradle supports said ring in a vertical orientation,

said ring cradle moves along the direction of the rotational axis of the mandrel to provide said axial translation of said plurality of material delivery heads simultaneously relative to the mandrel surface,

at least one of said plurality of material delivery heads is a tape laying delivery head; and

said plurality of material delivery heads is capable of laying down at least 700 lbs/hr of composite material.

67. (Previously Presented) The device of claim 62, further comprising a horizontal turntable and at least one creel system, wherein:

said horizontal turntable supports the mandrel so that the rotational axis of the mandrel is vertical and rotates the mandrel about the rotational axis of the mandrel,

said mechanical supporting structure comprises a ring oriented horizontally and surrounding said mandrel surface,

said ring is connected to at least one vertical support post that provides vertical movement of said ring,

said at least one creel system is mounted on said ring,

said creel system provides material to at least one of said plurality of material delivery heads,

said at least one of said plurality of material delivery heads is a fiber placement head, and

said plurality of material delivery heads is capable of laying down at least 300 lbs/hr of composite material.

68. (Previously Presented) The device of claim 62, wherein each of said plurality of material delivery heads is individually controllable independently of said other material delivery heads and in coordination with rotation of the mandrel surface of the mandrel.

69. (Previously Presented) An aircraft part manufacturing device for fabricating a section of an aircraft fuselage via automated composite lamination on a mandrel surface, comprising:

a mandrel comprising a rotational axis and the mandrel surface, wherein the mandrel surface substantially conforms to the section of the aircraft fuselage;

a mechanical supporting structure moveable relative to the mandrel, wherein the mandrel is rotatable relative to said mechanical supporting structure;

a plurality of material delivery heads supported by said mechanical supporting structure and disposed surrounding the mandrel, wherein said mechanical supporting structure provides for axial translation of said plurality of material delivery heads relative to the mandrel surface during fabrication of the section of the aircraft fuselage, and wherein each of said plurality of material delivery heads is:

designed to apply composite material along the mandrel surface during fabrication of the section of the aircraft fuselage;

individually positionally adjustable relative to the mandrel surface, the mechanical supporting structure and the other material delivery heads during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage; and

an arm mechanism connecting said at least one material delivery head to said mechanical supporting structure, wherein:

said arm mechanism provides motion of said at least one material delivery head independent of the other material delivery heads and relative to the mandrel surface in a direction normal to the mandrel surface;

said arm mechanism provides rotation of said at least one material delivery head independent of the other material delivery heads and relative to the mandrel surface about an axis normal to the mandrel surface;

said arm mechanism provides a circumferential position adjustment of said at least one material delivery head independent of the other material delivery heads and in a hoop direction relative to the mandrel surface; and

said arm mechanism provides an axial position adjustment of said at least one material delivery head independent of the other material delivery heads and relative to the mandrel surface.

70. (Previously Presented) The device of claim 69, wherein each of said plurality of material delivery heads is:

rotatable about an axis normal to the rotational axis during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

71. (Previously Presented) The device of claim 69, wherein at least one of the material delivery heads is designed to apply composite material at a first angle relative to the mandrel, while at least one of the other material delivery heads is simultaneously applying composite material at a second angle relative to the mandrel.

72. (Previously Presented) The device of claim 69, wherein each of said plurality of material delivery heads is individually controllable independently of said other material delivery heads and in coordination with rotation of the mandrel surface of the mandrel.

73. (Previously Presented) An aircraft part manufacturing device for fabricating a section of an aircraft fuselage via automated composite lamination on a mandrel surface, comprising:

a mandrel comprising a rotational axis and the mandrel surface, wherein the mandrel surface substantially conforms to the section of the aircraft fuselage;

means for supporting a plurality of material delivery heads, wherein the mandrel is moveable relative to said plurality of material delivery heads during fabrication of the section of the aircraft fuselage, and wherein each of said plurality of material delivery heads is designed to apply composite material along the mandrel surface during fabrication of the section of the aircraft fuselage;

means for providing for movement of said plurality of material delivery heads relative to the mandrel surface during fabrication of the section of the aircraft fuselage; and

means for providing an individual position adjustment relative to the mandrel surface for said plurality of material delivery heads during fabrication of the section of the aircraft fuselage, wherein each of said plurality of material delivery heads is: individually positionally adjustable relative to the mandrel surface and the other material delivery heads during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

74. (Previously Presented) The device of claim 73, wherein at least one of the material delivery heads is designed to apply composite material at a first angle relative to the mandrel, while at least one of the other material delivery heads is simultaneously applying composite material at a second angle relative to the mandrel.

75. (Previously Presented) The device of claim 73, wherein said means for supporting said plurality of material delivery heads includes means for translating said plurality of material delivery heads in an axial direction relative to said mandrel.

76. (Previously Presented) The device of claim 73, wherein said means for providing an individual position adjustment comprises:

means for providing an axial position adjustment of said material delivery heads relative to the mandrel surface and independent of the other material delivery heads.

77. (Previously Presented) The device of claim 73, wherein said means for providing an individual position adjustment comprises:

means for providing a circumferential position adjustment of said material delivery heads in a hoop direction relative to the mandrel surface and independent of the other material delivery heads.

78. (Previously Presented) The device of claim 73, wherein each of said plurality of material delivery heads is: rotatable about an axis normal to the rotational axis during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage, and wherein said means for providing an individual position adjustment comprises:

means for providing a motion of said material delivery heads relative to the mandrel surface in a direction normal to the mandrel surface and independent of the other material delivery heads; and

means for providing a rotation of said material delivery heads relative to the mandrel surface about an axis normal to the mandrel surface and independent of the other material delivery heads.

79. (Previously Presented) The device of claim 73, wherein said means for providing an individual position adjustment comprises:

means for individually controlling each of said plurality of material delivery heads independently of the other material delivery heads and in coordination with rotation of the mandrel surface of the mandrel.

80. (Previously Presented) The device of claim 73, wherein each of said plurality of material delivery heads is individually controllable independently of said other material delivery heads and in coordination with rotation of the mandrel surface of the mandrel.

81. (Previously Presented) A method for fabricating a section of an aircraft fuselage using a plurality of material delivery heads to apply composite materials on a mandrel surface of a mandrel having an axis, wherein the mandrel is rotatable relative to said plurality of

material delivery heads, and wherein the mandrel surface substantially conforms to the section of the aircraft fuselage, the method comprising steps of:

applying, via the material delivery heads, composite material along the mandrel surface during fabrication of the section of the aircraft fuselage;

moving at least some of said material delivery heads relative to the mandrel surface during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage; and

individually adjusting positions of at least some of said material delivery heads relative to the mandrel surface and the other material delivery heads during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

82. (Previously Presented) The method of claim 81, further comprising the step of:

rotating at least some of said material delivery heads about an axis normal to the rotational axis during application of the composite material by the material delivery heads during fabrication of the section of the aircraft fuselage.

83. (Previously Presented) The method of claim 81, wherein at least one of the material delivery heads is designed to apply composite material at a first angle relative to the mandrel, while at least one of the other material delivery heads is simultaneously applying composite material at a second angle relative to the mandrel.

84. (Previously Presented) The method of claim 81, wherein said step of moving comprises:

translating said plurality of material delivery heads simultaneously in an axial direction relative to said mandrel.

85. (Previously Presented) The method of claim 81, wherein said step of individually adjusting comprises:

providing a circumferential position adjustment of said material delivery head independent of the other material delivery heads and in a hoop direction relative to the mandrel surface; and

providing an axial position adjustment of said material delivery head independent of the other material delivery heads and relative to the mandrel surface.

86. (Previously Presented) The method of claim 81, wherein said step of individually adjusting comprises:

providing a motion of said at least one material delivery head independent of the other material delivery heads and relative to the mandrel surface in a direction normal to the mandrel surface;

providing a rotation of said at least one material delivery head independent of the other material delivery heads and relative to the mandrel surface about an axis normal to the mandrel surface.

87. (Previously Presented) The method of claim 81, wherein said step of individually adjusting comprises:

individually controlling each of said plurality of material delivery heads independently of the other material delivery heads and in coordination with rotation of the mandrel surface of the mandrel.

88. (Previously Presented) The method of claim 81, further comprising steps of:

rotating the mandrel about a horizontal axis of rotation; and

delivering the composite material from said plurality of material delivery heads, wherein:

at least one of said plurality of material delivery heads is a tape laying machine; and

said plurality of material delivery heads lays down at least 700 lbs/hr of composite material at peak rate.

89. (Previously Presented) The method of claim 81, further comprising steps of:

rotating the mandrel about a horizontal axis of rotation; and

delivering the composite material from said plurality of material delivery heads, wherein:

at least one of said plurality of material delivery heads is a fiber placement head, and

said plurality of material delivery heads lays down at least 300 lbs/hr of composite material at peak rate.

90. (Previously Presented) The method of claim 81, wherein each of said plurality of material delivery heads is individually controllable independently of said other material delivery heads and in coordination with rotation of the mandrel surface of the mandrel.

91. (Previously Presented) A device for fabricating a section of a vehicle via automated composite lamination on a mandrel surface, comprising:

a mandrel comprising a rotational axis and the mandrel surface, wherein the mandrel surface substantially conforms to the section of the vehicle;

a mechanical supporting structure moveable relative to the mandrel, wherein the mandrel is rotatable relative to said mechanical supporting structure; and

a plurality of material delivery heads supported by said mechanical supporting structure, wherein said mechanical supporting structure provides for movement of said plurality of material delivery heads relative to the mandrel surface during fabrication of the section of the vehicle, and wherein each of said plurality of material delivery heads is:

designed to apply composite material along the mandrel surface during fabrication of the section of the vehicle; and

individually positionally adjustable relative to the mandrel surface and the other material delivery heads during application of the composite material by the material delivery heads during fabrication of the section of the vehicle.

92. (Previously Presented) A method for fabricating a section of a vehicle using a plurality of material delivery heads to apply composite materials on a mandrel surface of a

mandrel having an axis, wherein the mandrel is rotatable relative to said plurality of material delivery heads, and wherein the mandrel surface substantially conforms to the section of the vehicle, the method comprising steps of:

applying, via the material delivery heads, composite material along the mandrel surface during fabrication of the section of the vehicle;

moving at least some of said material delivery heads relative to the mandrel surface during application of the composite material by the material delivery heads during fabrication of the section of the vehicle; and

individually adjusting positions of at least some of said material delivery heads relative to the mandrel surface and the other material delivery heads during application of the composite material by the material delivery heads during fabrication of the section of the vehicle.

Please add new claims 93-100 as follows:

93. (New) The device of claim 38, wherein each of the material delivery heads is designed to apply the composite material in a fiber orientation that is independent of fiber orientations of the other material delivery heads.

94. (New) The device of claim 51, wherein each of the material delivery heads is designed to apply the composite material in a fiber orientation that is independent of fiber orientations of the other material delivery heads.

95. (New) The device of claim 62, wherein each of the material delivery heads is designed to apply the composite material in a fiber orientation that is independent of fiber orientations of the other material delivery heads.

96. (New) The device of claim 69, wherein each of the material delivery heads is designed to apply the composite material in a fiber orientation that is independent of fiber orientations of the other material delivery heads.

97. (New) The device of claim 73, wherein each of the material delivery heads is designed to apply the composite material in a fiber orientation that is independent of fiber orientations of the other material delivery heads.

98. (New) The method of claim 81, wherein each of the material delivery heads is designed to apply the composite material in a fiber orientation that is independent of fiber orientations of the other material delivery heads.

99. (New) The device of claim 91, wherein each of the material delivery heads is designed to apply the composite material in a fiber orientation that is independent of fiber orientations of the other material delivery heads.

100. (New) The method of claim 92, wherein each of the material delivery heads is designed to apply the composite material in a fiber orientation that is independent of fiber orientations of the other material delivery heads.